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# UTILITY PATENT APPLICATION TRANSMITTAL

*(Only for new nonprovisional applications under 37 CFR 1.53(b))*

| | |
|---|---|
| *Attorney Docket No.* | 004814.P017 |
| *First Inventor or Application Identifier* | Christopher Phillips |
| *Title* | MASKING PRIVATE BILLING DATA BY ASSIGNING OTHER BILLING |
| *Express Mail Label No.* | EL414991054US |

jc525 U.S. PTO 09/555066 04/20/00

## APPLICATION ELEMENTS

*See MPEP chapter 600 concerning utility patent application contents*

*ADDRESS TO:* Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. ☒ Fee Transmittal Form
*(Submit an original, and a duplicate for fee processing)*

2. ☒ Specification [*Total Pages 34*]
*(preferred arrangement set forth below)*
- Descriptive title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (*if filed*)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

3. ☒ Drawing(s) *(35 U.S.C. 113)* [*Total Sheets 5*]

4. Oath or Declaration [*Total Pages 3*]
a. ☒ Newly executed (original copy)
b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))
*(for continuation/divisional with Box 16 completed)*
i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR §§ 1.63(d)(2) and 1.33(b).

**NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).*

5. ☐ Microfiche Computer Program *(Appendix)*

6. Nucleotide and/or Amino Acid Sequence Submission
*(if applicable, all necessary)*
a. ☐ Computer Readable Copy
b. ☐ Paper Copy (identical to computer copy)
c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

7. ☒ Assignment Papers (cover sheet & document(s))
8. ☐ 37 C.F.R. § 3.73(b) Statement *(when there is an assignee)* ☒ Power of Attorney
9. ☐ English Translation Document *(if applicable)*
10. ☐ Information Disclosure Statement (IDS)/PTO - 1449 ☐ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503)
*(Should be specifically itemized)*
13. ☒ *Small Entity Statement(s) ☐ Statement filed in prior application, Status still proper and desired
14. ☐ Certified Copy of Priority Document(s)
*(if foreign priority is claimed)*
15. ☐ Other: .....

16. **If a CONTINUING APPLICATION**, *check appropriate box, and supply the requisite information below and in a preliminary amendment:*
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: _____

*Prior application Information:* Examiner _____ *Group/Art Unit:* _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 17. CORRESPONDENCE ADDRESS

☐ *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* *or* ☒ *Correspondence address below*

| | | | | | |
|---|---|---|---|---|---|
| *Name* | BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP | | | | |
| *Address* | 12400 Wilshire Boulevard, Seventh Floor | | | | |
| *City* | Los Angeles | *State* | California | *Zip Code* | 90025 |
| *Country* | U.S.A. | *Telephone* | (503) 684-6200 | *Fax* | (503) 684-3245 |

| | | | |
|---|---|---|---|
| *Name (Print/Type)* | Steven D. Yates, Reg. No. 42,242 | | |
| *Signature* | | *Date* | 04/20/00 |

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# STATEMENT CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) & 1.27(c)) – SMALL BUSINESS CONCERN

Docket Number (Optional)
004814.P017

Applicant, Patentee, or Identifier: _____
Application or Patent No.: _____
Filed or Issued: April 20, 2000
Title: MASKING PRIVATE BILLING DATA BY ASSIGNING OTHER BILLING DATA TO USE IN

I hereby state that I am

☒ the owner of the small business concern identified below:
☐ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN Wildseed Ltd.

ADDRESS OF SMALL BUSINESS CONCERN 550 Kirkland Way N.E. Suite 100
Kirkland, WA 98033

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small busines concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

☒ the specification filed herewith, with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern, or organization having rights to the invention must file separate statements as to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who could not qualify as a an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a non-profit organization under 37 CFR 1.9(e).

Each such person, concern or organization having any rights in the invention is listed below:

☒ No such person, concern, or organization exists.
☐ Each such person, concern or organization is listed below.*

Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small entities (37 CFR 1.9(e).

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

NAME OF PERSON SIGNING: Swain Porter

TITLE OF PERSON OTHER THAN OWNER: President

ADDRESS OF PERSON SIGNING: 550 Kirkland Way N.E., Suite 100, Kirkland, WA 98033

SIGNATURE: _____ DATE: 4/20/00

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Attorney's Docket No. 04814.P017

APPLICATION FOR UNITED STATES LETTERS PATENT

FOR

# Masking Private Billing Data By Assigning Other Billing Data To Use In Commerce With Businesses

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**Express Mail Label No. EL414991054US**

# Masking Private Billing Data By Assigning Other Billing Data To Use In Commerce With Businesses

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates to the field of information systems. More specifically, the present invention relates to electronic purchases while maintaining privacy of customer billing data.

### 2. Background Information

The Internet is a well-known collection of public and private data communication and multimedia networks that operate using common protocols to form a world wide network of networks. Recently there has been an explosion in the availability of "virtual storefronts," e.g., commerce sites, reachable over the Internet. This rapid growth is due, in part, to the availability of fast, reliable and affordable computing device systems, and the general simplification of networking hardware and configuration. Thus, consumers and businesses alike now have access to hardware that makes effective online commerce commercially practicable.

To conduct online transactions, a business typically sets up a home page (e.g., "web site") on the World Wide Web, which is a logical overlay of the Internet. Web sites are simply machines located someplace within the Internet, with traditional naming conventions for the machines, e.g., named WWW, and

holding themselves available to interact using standard protocols such as Hypertext Transfer Protocol (HTTP), and programming languages or environments such as Hypertext Transfer Protocol HTML, XML, Java, JavaScript, Java Beans, ActiveX, Visual Basic, or the like.

To make a purchase via a web site, a customer executes a "browser," such as the Internet Explorer, Netscape Navigator, or other network aware application program that is configured to communicate with a business' web site. The customer locates a particular product, and proceeds to a "check out" web page (or equivalent) to process a purchase transaction. At this point, the customer must enter credit card data and other data sufficient to identify the customer and allow purchase of goods to occur.

Historically, thieves have attempted to monitor such online transactions so as to steal consumer data to allow engaging in subsequent fraudulent transactions. Such monitoring is possible due to the inherently insecure nature of the Internet communication protocol. Internet communication follows the Transmission Control Protocol/Internet Protocol (TCP/IP), where data is broken into small packets that are individually sent to a recipient, received by the recipient and then re-assembled into the original data.

Unfortunately, anyone with access to a network has the ability to "snoop" network traffic on that network. Thus, anyone capable of monitoring some portion of the communication path between the customer and business is then able to monitor the purchase transaction. To overcome this security problem, various protocols, e.g., IP Security (IPSEC), Secure Sockets Layer (SSL),

Secure HTTP (S-HTTP) have emerged to allow a business and a customer to securely communicate.

Although the data packets can still be snooped, their contents are now encrypted and unusable. Thus, thieves have recently begun to attack, or "hack," the online commerce sites so as to steal consumer data stored within databases maintained by the business. Since private consumer data, such as credit card information, once received by a business, is reassembled and decrypted by the business, the data is available for theft.

Thus, what is needed is an environment which provides consumers with the ability to engage in online transactions in a more secure manner.

## SUMMARY

Apparatuses and methods registering a user with multiple businesses, where each business is given billing data, such as credit card data, that is unique to that business. Apparatuses, such as computing devices, and consumer electronic devices such as a telephone, communicate with a billing service so that billing data can be generated for particular businesses and used in commercial transactions with the business. Such communication and generation may be in advance of a purchase, or generated in real-time during a purchase.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a client in communication with a network.

FIG. 2 is a flow chart according to one embodiment of the invention, illustrating a client registering with a business for purchasing a good.

FIG. 3 is a flowchart according to one embodiment of the invention, in which a client purchases a good using billing data provided in advance by a billing service.

FIG. 4 is a flowchart according to one embodiment of the invention, in which a client purchases a good using billing data provided in real-time by a billing service.

FIG. 5 illustrates one embodiment of a suitable computing environment in which certain aspects of the illustrated invention may be implemented.

## DETAILED DESCRIPTION

In various embodiments of the invention, a customer is able to establish accounts with web sites without revealing private billing information such as credit card numbers, advance debit arrangements, invoice arrangements, etc. to a web site / business from whom the customer purchases goods.

FIG. 1 illustrates a client **100** in communication with a network **104**. Also attached to the network are multiple servers **102** (business web sites), such as those provided by e-commerce sites, online retailers, or other businesses seeking to engage in commerce with by way of networked customers.

It is assumed the client comprises a computing device, such as a personal computer, which operates on behalf of a user (the purchaser of the good). In

alternate embodiments, the client may be incorporated into an electronic card, a telephone (FIG. 6), a personal digital assistant (PDA), a portable audio device, a portable audiovisual device, a cellular telephone, a key-chain dongle, or within an automobile or other transportation device.

It is further assumed that each of the network locations to which a client may communicate provide a "web site" for engaging in commercial transactions, and will collectively be referred to as "businesses." For the purposes of this description, the phrase "web site" is intended to be a general reference to a network "presence" maintained by a business as well a logical presence maintained on behalf of a business.

The clients **100** and businesses **102** are in communication, through the network **104**, with a billing service **106**. The billing service is configured to allow clients **100** to reduce the risk of disclosing billing data, such as personal credit card numbers, debit card numbers, bank account numbers, and the like, to businesses **102**. In one embodiment, the billing service facilitates commercial transactions by generating substitute billing data that the client **100** can use when engaging in commercial transactions with businesses **102**. The phrase "substitute billing data" refers to valid billing data that is owned and/or controlled by the billing service **106**, where billing data is temporarily or permanently distributed to clients **100** to replace personal and/or private billing data of the client.

Also in communication with the client **100** and businesses **102** by way of the network **104**, is an encryption server **108**. The encryption server can be used

to provide encryption keys to a client **100** and business **102** to allow them to engage in secure communications. In one embodiment, the encryption server **108** is used to engage in conventional public key encryption systems, where the encryption server provides directory assistance services, allowing clients **100** and businesses **102** to retrieve public encryption keys.

In one embodiment, public key encryption services are used in addition to encryption services already available to a client (e.g., such as those available within a web browser or other communication program used by the client **100**). In an alternate embodiment, already available encryption services, such as those provided by a web browser, are used to securely communicate with the encryption server **108** to obtain encryption keys for opening a secure communication channel between the client **100** and business **102**.

This allows weaker security afforded by the client communication environment, e.g., a 40 bit or other short key system, to be used to communicate with the encryption server **108** to obtain more secure (e.g., longer) encryption keys. In this alternate embodiment, the built in security can also be used to transfer non-public key based cryptosystem keys, such as single use session keys, to the client **100** and business **102** for engaging in commerce.

Associated with clients **100** are local storage, such as a database **110**, that can store billing data and encryption data for use during transactions with a business **102**. In one embodiment, records **112** within the database **110** are keyed on a business **102** identity reference. A business identity can be tracked by way of business name, unique identifier for the business (e.g., a tax ID or

other assigned/selected identifier), uniform resource locator (URL), TCP/IP "dot quad" network address (e.g., 10.1.2.3) used to access the business **102** over the network **104**, or a combination of these and/or other references.

As illustrated, the client local storage containing the database **110** is integral to a client **100**, such as within local mass storage device(s). However, it will be appreciated that the database may be contained within a separate computing device (not shown) associated with the client **100**, or maintained by or in conjunction with the billing service **106** or encryption server **108**. For example, the billing service **106** or encryption server **108** may be used to store backup copies of billing data.

FIG. 2 is a flow chart according to one embodiment of the invention, illustrating a client **100** registering with a business **102** for purchasing a good (e.g., a physical or electronic item) from the business.

The first illustrated operation is the user initializing **200** the computing device. It is assumed that initialization includes all steps required to boot, wake from an idle state, or otherwise start the computing device and configure it for purchasing activity. Assume that the computing device is a handheld ("palmtop") personal computer executing the Microsoft Windows operating system. After initialization, the user loads **202** a communication program through which to engage in the purchasing activity.

It will be appreciated that a number of environments may be used to implement the communication program. For example, a dedicated / custom

application program may be designed to access businesses over a network. Alternatively, the communication program can be built using communication features provided by Internet web browser products, such as Microsoft Internet Explorer, Netscape Navigator, or Opera.

In this latter environment, the communication program may be implemented in one of, or a combination of, Java, JavaScript, JavaBeans, ActiveX, Visual Basic, HTML, DHTML, or other Internet related programming environments. It is assumed herein the communication program is based on an Internet browser, and that traditional Internet related communication protocols (e.g., TCP/IP, HTML, etc.) are used to communicate with businesses over the Internet. As discussed with respect to FIG. 1, each business provides a web address to which a client can connect to engage in purchase transactions.

After communication program initialization, the computing device is used to register **204** the user with a first web site maintained by a first business. Note, however, that even though the illustrated embodiment requires registration, it will be appreciated that in other embodiments, such registration need not occur first, or at all. To register, the computing device contacts **206** the first web site. In response the web site sends an acknowledgement **208**. Since an Internet browser is assumed in use, the contact is by way of directing the browser to an appropriate receiving port monitored by a web server of the first business. It is assumed that port 80, the traditional Internet communication port, is used for communication. In the web browser context, acknowledgement can be

determined by receiving a "home page" or start page from the first business' web server.

If **210** no acknowledgement is received, then a registration error has occurred and processing of this registration halts **212**; in one embodiment, processing continues on (not shown) with registration attempts with other businesses. If acknowledgement is received, then the client **100** tells the business **102** it is interested in registering with the business **102**.

In one embodiment, the registration process is automated, where the business web server is configured to receive a registration command from the client, and in response the business web server sends the client registration forms to complete. For example, in response to the registration command, an HTML form (or equivalent structure) containing fields for the user's name, address, telephone number, and billing data, such as credit or debit card numbers, invoicing preferences, etc., is sent **214** to the client. This form (or equivalent structure) is completed **216** and returned **218** to the business. In response, the business **102** processes the returned data and registers **220** the client with the billing data returned **218** to the business web server.

Completion of the form can be automated, through automated parsing of the form to identify various fields to fill out. In one embodiment, the extensible markup language (XML) is used to encode forms with semantic meaning to facilitate automatic interpreting and completing of a form. In an alternate embodiment, the user is allowed to review and complete a form with data known to the user, or the user can be provided with an opportunity to review and change

a form completed by the computing device. In another embodiment, a special communication port, analogous to browser port 80, is used to send and receive registration data.

It will be appreciated that even though the above description assumes registration of a user with businesses, such registration is not required in order to obtain billing data to present to such businesses.

FIG. 3 is a flowchart according to one embodiment of the invention, in which a client **100** purchases a good using billing data provided in advance by a billing service **106**. This figure concerns the logical data flow for obtaining billing data used by a client **100** in purchasing a good from a business **102**.

As discussed above, there are intrinsic security issues within networks, such as the Internet or home/office local area networks (LANs), when more than just the parties to a conversation may "snoop" data passing on the network so as to discover secrets (e.g., credit card data or other sensitive data) disclosed during the conversation. In addition to attempts to securely encrypt the data transfers themselves, as will be discussed below, client provided billing data can be customized so as to reduce risk of theft and/or fraudulent use.

A first operation is to contact **302** the billing service. In response, the billing service asks **304** for the business **102** with which the customer seeks to interact. As discussed above, a variety of different information can be provided to identify the business. For simplicity, it is assumed that the business name is used to identify the business **102**. The business name is provided **306** to the

billing service **106**. In response the billing service generates **308** billing data that can be used by the client in future transactions between the client and the identified business. The correspondence between billing data and business is tracked by the client **100** and/or it is tracked by the billing service **106**.

Once the billing data is known, the client **100** can then contact **310** a business and decide **312** on a good to purchase. In response to a purchase decision, the business sends **314** a payment request to the client to arrange for receiving payment for the good. However, unbeknownst to the business **102**, in response to the payment request, instead of sending personal credit card information, or other payment data, the client **100** instead sends **316** the business the billing data created in advance by the billing service for the business **102**.

In one embodiment, the billing service obtains the billing data to distribute to clients by entering into agreements with banking institutions (or equivalent). The billing service is provided a large number different billing data, e.g., credit card numbers, debit card numbers, etc., and the billing service may also set up internal invoice accounts and the like. These different billing data are provided to a client **100** when the client registers with the billing service the client's intent to purchase from a business **102**.

In one embodiment, billing data presented to a client **100** is uniquely associated with the particular business **102** the client **100** intends to purchase from. Charges made against the billing data are received **318** by the billing service in due course through standard financial institutions such as banks,

savings and loans, investment houses, and the like. These charges are verified **320** for validity.

In one embodiment, the client informs the billing service of the items purchased (or possibly just item categories) so that the billing service may audit a particular charge to ensure only expected purchases appear on the charge. In one embodiment, the client informs the billing service of billing data that is provided to businesses so as to facilitate verification. For example, the origin of a charge can be compared against the business associated with the billing data.

In this embodiment, if **322** the charge origin fails to match the business expected to be making the charge, then the charge may be fraudulent. Consequently, the charge is contested **324** so as to allow the client to investigate the validity of the charge before being billed for the charge. However, if **322** the expected business matches the charge origin, then the client is billed for the purchase amount paid by the billing service. Note that the client may be billed in a manner entirely different from the payment system required/used by the business **102**.

For example, the client may have arranged to have purchases automatically deducted from a bank account, while the billing service **106** is responsible for honoring a charge made by the business against credit card data provided by the client **100**. Alternatively, the client may have arranged payment such that the billing service performs a direct wire transfer from a client's bank account directly into a receivables account of the business **102**.

By associating a particular business with billing data, it is possible to account for a thief stealing apparently valid billing data from a business' Internet web server, and then attempting to engage in fraudulent activity. In addition to contesting **324** improper charges, the billing service can be configured to retire billing data that has been compromised.

FIG. 4 is a flowchart according to one embodiment of the invention, in which a client **100** purchases a good using billing data provided in real-time by a billing service **106**. It will be appreciated that even though FIGS. 3 and 4 are presented separately, a single client may use both real-time generated billing data, and advance-obtained billing data, depending on the business.

After contacting **400** a business **102** from which a purchase is to be made, the client **100** user decides **402** on the purchase; this decision is transmitted to the business. It will be appreciated that this decision-making process may include the user reviewing various offerings of the business **102** (e.g., "surfing" the business web site), as well as directly connecting to a particular uniform resource location (URL) for purchasing a product (a purchase link may be known in advance).

In response to the purchase decision, the business **102** sends **404** a payment request to the client. In response, analogous to that described above for FIG. 3, the client contacts **302** the billing service **106**, provides **306** the business name to the service, and receives in real time billing data generated **308** by the billing service for the business **102**. In one embodiment, the billing

data presented to the client **100** is uniquely associated with the particular business **102** the client **100** is purchasing from.

As with FIG. 3, unbeknownst to the business **102**, in response to the payment request **404**, instead of sending personal billing information of the user, the real time generated billing data is instead sent **406** to the business.

Charges made against the billing data are received **408** by the billing service. As with FIG. 3, these charges are verified **410** for validity. If **412** the charges appear invalid/fraudulent, the charge may be automatically contested **324** or other action taken, such as highlighting the transaction to the user to allow review of the validity of the charge.

If **412** the charge is valid, then the client is billed for the purchase amount paid by the billing service. Note that the client may be billed in a manner entirely different from the payment system required/used by the business **102**. In one embodiment, highlighting occurs within the bill sent to the user to accentuate invalid or possibly invalid charges. Highlighting can be by a variety of different methods, such as printing an offending charge in a bold typeface, in a larger type size, in a different font from the rest of the bill, in a different color, in a different section of a bill which organizes suspect charges in a single region, or through a combination of these or other highlighting techniques.

In one embodiment, the billing service **106** tracks expiration dates for charges made by the user. That is, if a charge is received against a credit card number provided to a client **100** for purchasing from a business **102**, there may be a timeout period, such as 60 days, in which a charge must be contested if

such charge is to be ever contested. In such circumstances, the highlighting may include prioritization of listed charges according to expiration of contest periods. In another embodiment, a separate bill section is provided for contestable charges expiring within a certain amount of time, such as two weeks.

In one embodiment, the client can elect to be billed electronically, in addition to or in lieu of receiving a physical bill printed on paper. Electronic billing can be by way of E-mailing or otherwise electronically transferring bill data to the client. Alternatively, bills can be maintained by the billing service **106**, such as through personalized web pages to which a client can log in and review charges. In one embodiment, the personalize web pages include buttons or other controls to allow disputing charges. In one embodiment, single-click buttons are provided with listed charges, where a single click of the button institutes a dispute process to cause the selected charge to be reviewed for fraud.

FIG. 5 and the following discussion are intended to provide a brief, general description of a suitable computing environment in which certain aspects of the illustrated invention may be implemented. The invention may be described by reference to different high-level program modules and/or low-level hardware contexts. Those skilled in the art will realize that program module references can be interchanged with low-level hardware instructions.

Program modules include procedures, functions, programs, components, data structures, and the like, that perform particular tasks or implement particular abstract data types. The modules may be incorporated into single and multi-

processor computing systems, as well as hand-held devices and controllable consumer devices (e.g., Personal Digital Assistants (PDAs), cellular telephones, set-top boxes, Internet appliances, etc.). It is understood that modules may be implemented on a single computing device, or processed over a distributed network environment, where modules can be located in both local and remote memory storage devices.

An exemplary system for implementing the invention includes a computing device **502** having system bus **504** for coupling together various components within the computing device. The system **504** bus may be any of several types of bus structures, such as PCI, AGP, VESA, Microchannel, ISA and EISA, etc. Typically, attached to the bus **504** are processors **506** such as Intel, DEC Alpha, PowerPC, programmable gate arrays, etc., a memory **508** (e.g., RAM, ROM), storage devices **510**, a video interface **512**, and input/output interface ports **514**.

The storage systems and associated computer-readable media provide storage of data and executable instructions for the computing device **502**. Storage options include hard-drives, floppy-disks, optical storage, magnetic cassettes, tapes, flash memory cards, memory sticks, digital video disks, and the like, and may be connected to the bus **504** by way of an interface **526**.

Computing device **502** is expected to operate in a networked environment using logical connections to one or more remote computing devices **516**, **518** through a network interface **520**, modem **522**, or other communication pathway. Computing devices may be interconnected by way of a network **524** such as a local intranet or the Internet. Thus, for example, with respect to the illustrated

embodiments, assuming computing device **502** is a client seeking to purchase goods, then remote devices **516**, **518** may be a billing service **516** providing substitute billing data to the user for purchasing goods from a business **518**.

It will be appreciated that remote computing devices **516**, **518** may be configured like computing device **502**, and therefore include many or all of the elements discussed for computing device **502**. It should also be appreciated that computing devices **502**, **516**, **518** may be embodied within a single device, or separate communicatively-coupled components, and include routers, bridges, peer devices, web servers, and application programs utilizing network application protocols such as HTTP, File Transfer Protocol (FTP), Gopher, Wide Area Information Server (WAIS), and the like.

Having described and illustrated the principles of the invention with reference to illustrated embodiments, it will be recognized that the illustrated embodiments can be modified in arrangement and detail without departing from such principles.

And, even though the foregoing discussion has focused on particular embodiments, it is understood that other configurations are contemplated. In particular, even though expressions such as "in one embodiment," "in another embodiment," and the like are used herein, these phrases are meant to generally reference embodiment possibilities, and are not intended to limit the invention to particular embodiment configurations.

As used herein, these terms may reference the same or different embodiments, and unless expressly indicated otherwise, are combinable into

other embodiments. Consequently, in view of the wide variety of permutations to the above-described embodiments, the detailed description is intended to be illustrative only, and should not be taken as limiting the scope of the invention. What is claimed as the invention, therefore, is all such modifications as may come within the scope and spirit of the following claims and equivalents thereto.

Express Mail Label No. EL414991054US

What is claimed is:

1. A method comprising:

registering a user with a first web site;

a billing service providing a first billing data for use to register the user with said first web site;

registering the user with a second web site; and

the billing service providing a second billing data, separate and distinct from the first billing data, for use to register said user with said second web site.

2. The method of claim 1, wherein the first/second billing data are provided to the user in advance of said registering with said first/second web sites.

3. The method of claim 1, wherein the first/second billing data are provided to the user in real time during said registering with said first/second web sites.

4. The method of claim 1, wherein the first billing data comprises a first credit card identifier, and the second billing data comprises a second credit card identifier, separate and distinct from said first credit card identifier.

5. The method of claim 4, wherein the first/second billing data is restricted to transactions between the user and said first/second web sites.

6. The method of claim 1,

wherein the first billing data corresponds to a selected one of an advance debit charge, a real-time credit charge, or a post-transaction invoicing arrangement, and

the second billing data corresponds to a selected one of an advance debit charge, a real-time credit charge, or a post-transaction invoicing arrangement, said second billing data separate and distinct from said first billing data.

7. The method of claim 1, further comprising:

said first/second web sites requiring first/second payment formats;

paying for a transaction with said first/second web site according to said first/second payment format; and

billing the user according to a private billing data different from said first/second billing data.

8. The method of claim 1, further comprising:

said first/second web sites requiring first/second payment formats;

determining at least one user billing format for the user; and

the billing service converting, on behalf of the user, between said first/second payment formats and a selected one of said at least one user billing format.

9. The method of claim 8, further comprising:

submitting said first/second billing data to said first/second web sites;

purchasing a product from the first web site;

receiving a charge against said first/second billing data; and

billing the user according to said selected billing format.

10. The method of claim 1, further comprising:

the billing service obtaining said first/second billing data from a financial institution.

11. The method of claim 1, wherein the billing service providing said first/second billing data comprises:

the billing service selecting said first/second billing data from a plurality of distinct billing data provided to said computing device.

12. The method of claim 11, the method further comprising:

the billing service contacting a financial institution to obtain the plurality of distinct billing data from the financial institution; and

receiving the plurality of distinct billing data from the financial institution.

13. The method of claim 1, further comprising:

the billing service obtaining in real time said first/second billing data from a bank.

14. The method of claim 1, further comprising:

the billing service obtaining said first/second billing data from a bank; and

during a transaction with said first/second web site, the computing device obtaining said first/second billing data in real time from the billing service.

15. The method of claim 14, further comprising:

the billing service receiving a plurality of billing data from the bank; and

selecting said first/second billing data from said plurality of billing data.

16. The method of claim 14, wherein said obtaining by the billing service of said first/second billing data is performed during the transaction with said first/second web site.

17. The method of claim 1, further comprising:

notifying the billing service of usage of said first/second billing data with said first/second web sites;

wherein said notifying allows the billing service to confirm charges to said first/second billing data originate from said first/second web sites.

18. The method of claim 17, further comprising:

wherein said notifying the billing service occurs with providing said first/second billing data to said first/second web site.

19. The method of claim 17, further comprising:

wherein said notifying the billing service occurs after providing said first/second billing data to said first/second web site.

20. The method of claim 1, further comprising:

receiving charges to said first and second billing data; and

organizing said received charges based at least in part on whether the charges are applied to the first or the second billing data.

21. The method of claim 20, wherein said organizing is based on whether a charge to first/second billing data is received from the web site to which said first/second billing data was provided.

22. The method of claim 21, further comprising:

the billing service disputing all charges to said first/second billing data not received from the web site to which said first/second billing data was provided.

23. The method of claim 22, further comprising:

wherein disputing is performed in response to an instruction of the user.

24. The method of claim 23, further comprising:

for disputable charges, providing a user interface having a control for each of said disputable charges;

wherein a single press of the control issues said instruction of the user.

25. The method of claim 1, wherein the web site is a selected one of a content provider, a service provider and an access provider.

26. A method comprising for a user to provide substitute billing data in lieu of personal billing data for the user, comprising:

an electronic device obtaining distinct credit card numbers from a billing service for use by the user as a substitute for said personal billing data;

the electronic device selecting a first of said credit card numbers to facilitate purchasing goods from a first business; and

the electronic device selecting a second of said credit card numbers to facilitate purchasing goods from a second business.

27. The method of claim 26, wherein the electronic device is a portable digital assistant, said method further comprising:

disposing said distinct credit card numbers in a memory within the electronic device;

identifying a connection attempt to a particular business;

looking for an associated credit card number for the particular business; and

if found, displaying the associated credit card number.

28. The method of claim 27, where further comprising:

if the associated credit card number is not found, then selecting a third credit card number from said distinct credit card numbers, associating said selected credit card number with the particular business; and

automatically connecting to the billing service of said association of said selected credit card number with the particular business.

29. The method of claim 26, wherein the method further comprises:

the electronic device notifying the billing service of said selection of said first/second distinct credit card numbers to facilitate purchasing goods from said first/second business.

30. A method comprising:

an billing service registering a user; and

the billing service providing at least a first and a second billing data, that are separate and distinct, for use by the user as a substitute for personal billing data when purchasing goods from a first and a second business.

31. The method of claim 30, wherein said first/second billing data comprises:

a third billing data for use by said first/second business for charging the billing service for goods purchased by said user; and

a fourth data for use by the billing service for billing the user for charges received from said first/second business.

32. The method of claim 30, further comprising:

the billing service providing a plurality of distinct billing data to an electronic device;

the user selecting said first/second separate and distinct billing data from said plurality of billing data; and

associating said first/second separate and distinct billing data with said first/second business.

33. The method of claim 32, wherein the electronic device is a personal digital assistant (PDA), said method further comprising:

disposing said distinct billing data in a memory within the electronic device;

identifying a connection attempt to a particular business;

looking for associated billing data for the particular business; and

if found, displaying the associated billing data.

34. The method of claim 33, wherein the method further comprises:

the PDA automatically connecting to the billing service and informing it of said selection of said first/second distinct billing data.

35. The method of claim 30, further comprising:

the billing service providing in real time said first/second billing data to an electronic device used by the user;

wherein the electronic device is operable to purchase goods from said first/second business.

36. The method of claim 30, further comprising:

the billing service receiving notification of usage of said first/second billing data with said first/second business from an electronic device used by the user.

37. The method of claim 36, wherein said receiving notification comprises receiving a charge against said first/second billing data by said first/second business.

38. A method comprising:

a billing service receiving purchase charges against substitute billing data associated with a user, said substitute billing data substituting for personal billing data of the user; and

the billing service grouping said received charges according each business submitting said charges;

wherein said each business is uniquely associated with different substitute billing data.

39. The method of claim 38, further comprising:

disputing charges against said substitute billing data if said received charges are not received from the business uniquely associated with said substitute billing data.

40. The method of claim 38, further comprising:

highlighting charges against said substitute billing data if said received charges are not received from the business uniquely associated with said substitute billing data.

41. The method of claim 40, further comprising:

asking the user whether to dispute a highlighted charge; and

disputing the highlighted charge in accordance with an answer to said asking.

42. The method of claim 41, further comprising:

providing the user with an end user interface feature to provide said answer with a single press of a key/control button.

43. An apparatus comprising:

a storage medium having stored therein a plurality of programming instructions designed to enable the apparatus, when the programming instructions are executed on behalf of a user, to

register the user with a first web site and provide a first billing data as substitute for personal billing data of the user, for said registering with said first web site, and

register the user with a second web site and provide a second billing data as substitute for personal billing data of the user, for said registering with said second web site, said second billing data separate and distinct from the first billing data; and

a processor coupled to the storage medium to execute the plurality of programming instructions.

44. The apparatus of claim 43, wherein the programming instructions, when executed by said processor, include further instructions to enable the apparatus to:

provide the first/second billing data to a selected one of the user for registering with said first/second web site.

45. The apparatus of claim 43, wherein the programming instructions, when executed by said processor, include further instructions to enable the apparatus to:

provide the first/second billing data to said first/second web site during registration therewith.

46. The apparatus of claim 43, wherein use of said first/second billing data is restricted to transactions between the user and said first/second web site.

47. The apparatus of claim 43, wherein the first billing data corresponds to a selected one of an advance debit charge, a real-time credit charge, or a post-transaction invoicing arrangement, and the second billing data corresponds to a selected one of an advance debit charge, a real-time credit charge, or a post-transaction invoicing arrangement, said second billing data separate and distinct from said first billing data.

48. The apparatus of claim 43, wherein the programming instructions include further programming instructions, when executed by said processor, to enable the apparatus to:

determine at least one user billing format for the user; and

register the user with a billing service, said billing service configured to convert, on behalf of the user, between said first/second billing data and the user billing format.

49. The apparatus of claim 43, wherein the apparatus is embedded within a host selected from a set of hosts consisting of: a computing device, an electronic card, a telephone, a personal digital assistant (PDA), a portable audio device, a portable audiovisual device, a cellular telephone, a key-chain dongle, and a transportation device.

50. The apparatus of claim 43, further comprising a user interface, wherein the programming instructions include further programming instructions, which when executed by the processor, enable the apparatus to:

receive a plurality of billing data from a billing service;

provide the plurality of billing data to the user interface;

request the user to select said first billing data from said plurality of billing data for association with said first web site; and

request the user to select said second billing data from said plurality of billing data for association with said second web site.

51. The apparatus of claim 43, further comprising:

a network interface;

wherein the programming instructions include further instructions, which when executed by the processor, configure the network interface to connect to a billing service.

52. The apparatus of claim 43, wherein the programming instructions, when executed by the processor, enable the apparatus to provide in real time said first/second billing data to an electronic device used by the user.

53. An apparatus comprising:

a storage medium having stored therein a plurality of programming instructions designed to enable the apparatus, when the programming instructions are executed, to provide at least a first and a second billing data, that are separate and distinct, for use by a user as a substitute for personal billing data when purchasing goods from a first and a second business; and

a processor coupled to the storage medium to execute the plurality of programming instructions.

54. The apparatus of claim 53, wherein said first/second billing data comprises:

a third billing data used by said first/second business for charging the billing service for goods purchased by said user; and

a fourth data for use by the billing service for billing the user for charges received from said first/second business.

55. The apparatus of claim 53, wherein the programming instructions, when executed by said processor, include further instructions to enable the apparatus to:

provide a plurality of distinct billing data to an electronic device;

receive a user selection of said first/second separate and distinct billing data from said plurality of billing data; and

associate said first/second separate and distinct billing data with said first/second business.

56. The apparatus of claim 54, wherein the electronic device includes a second processor for executing second programming instructions, which when executed by said second processor, direct the electronic device to:

dispose said distinct billing data in a memory within the electronic device;

identify a connection attempt to a particular business;

look for associated billing data for the particular business; and

display the associated billing data if found.

57. The apparatus of claim 56, wherein said second programming instructions, when executed by said second processor, include further instructions to enable the electronic device to:

automatically connect to the apparatus and inform it of said selection of said first/second distinct billing data.

58. The apparatus of claim 53, wherein the programming instructions, when executed by said processor, include further instructions to enable the apparatus to:

provide in real time said first/second billing data to an electronic device operable to purchase goods from said first/second business.

59. The apparatus of claim 53, wherein the programming instructions, when executed by said processor, include further instructions to enable the apparatus to:

receive notification of usage of said first/second billing data with said first/second business from an electronic device used by a purchaser.

60. The method of claim 59, wherein said receiving notification comprises receiving a charge against said first/second billing data by said first/second business.

Express Mail Label No. EL414991054US Date of Deposit: December 29, 2000

**Masking Private Billing Data By Assigning Other Billing Data To Use In Commerce With Businesses**

## ABSTRACT

A method and apparatus for shielding a user's private billing data, such as credit card information, or other billing arrangements, but distributing different billing data to businesses during commerce therewith. Also disclosed is assigning the different billing data through real-time and advance distribution of the different billing data to a user, as well . Also disclosed is validating the correctness of a charge through confirmation of the charge with a financial institution, such as a bank, and by comparing itemized charges against expected charges identified by the user.

"Express Mail" mailing label number EL414991054US Date of Deposit: December 29, 2000

FIG. 1

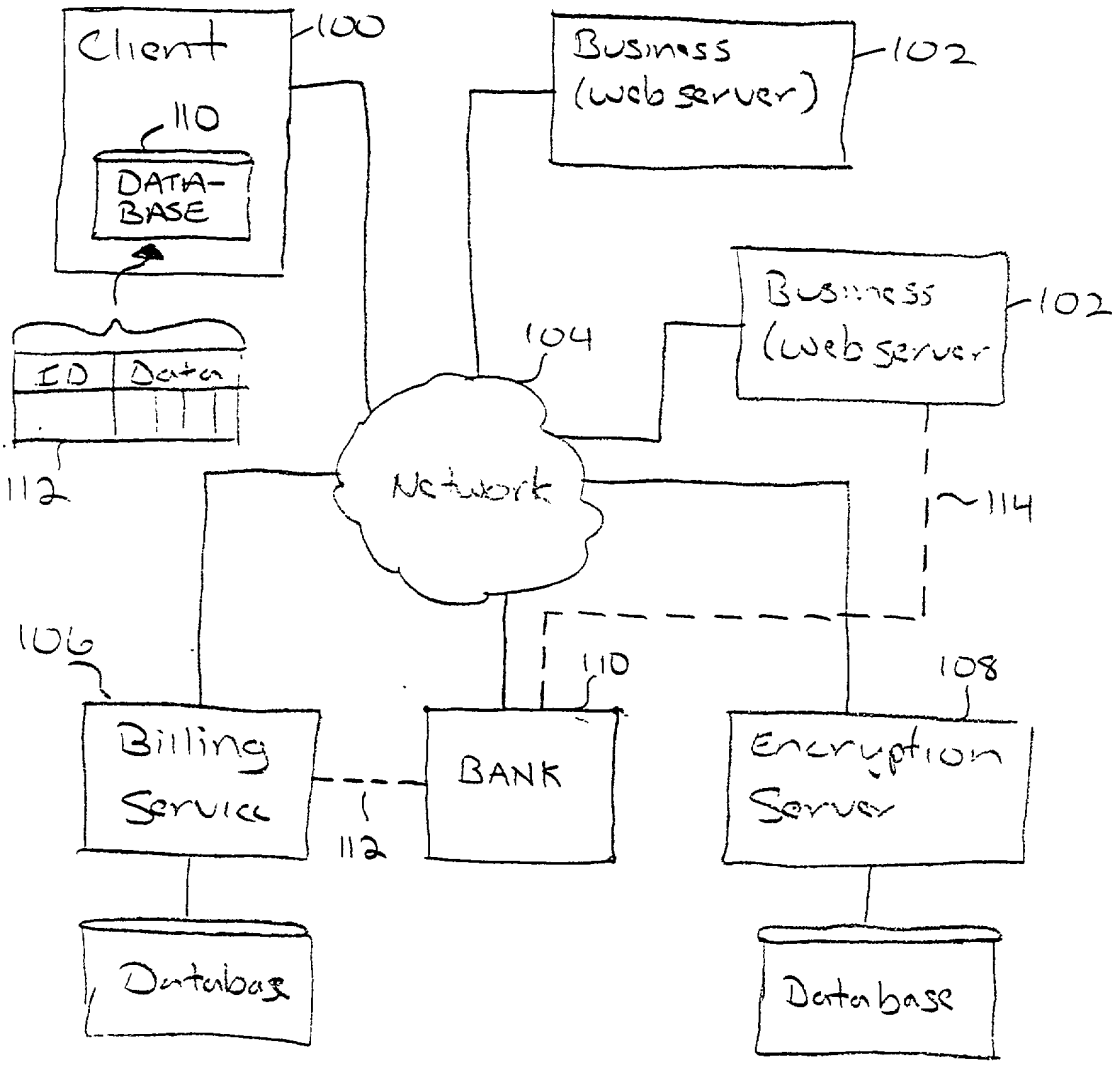

Client
100
110
DATA-BASE
ID
Data
112
Business (web server)
102
Business (web server)
102
104
Network
114
106
Billing Service
BANK
110
112
108
Encryption Server
Database
Database

FIG. 2

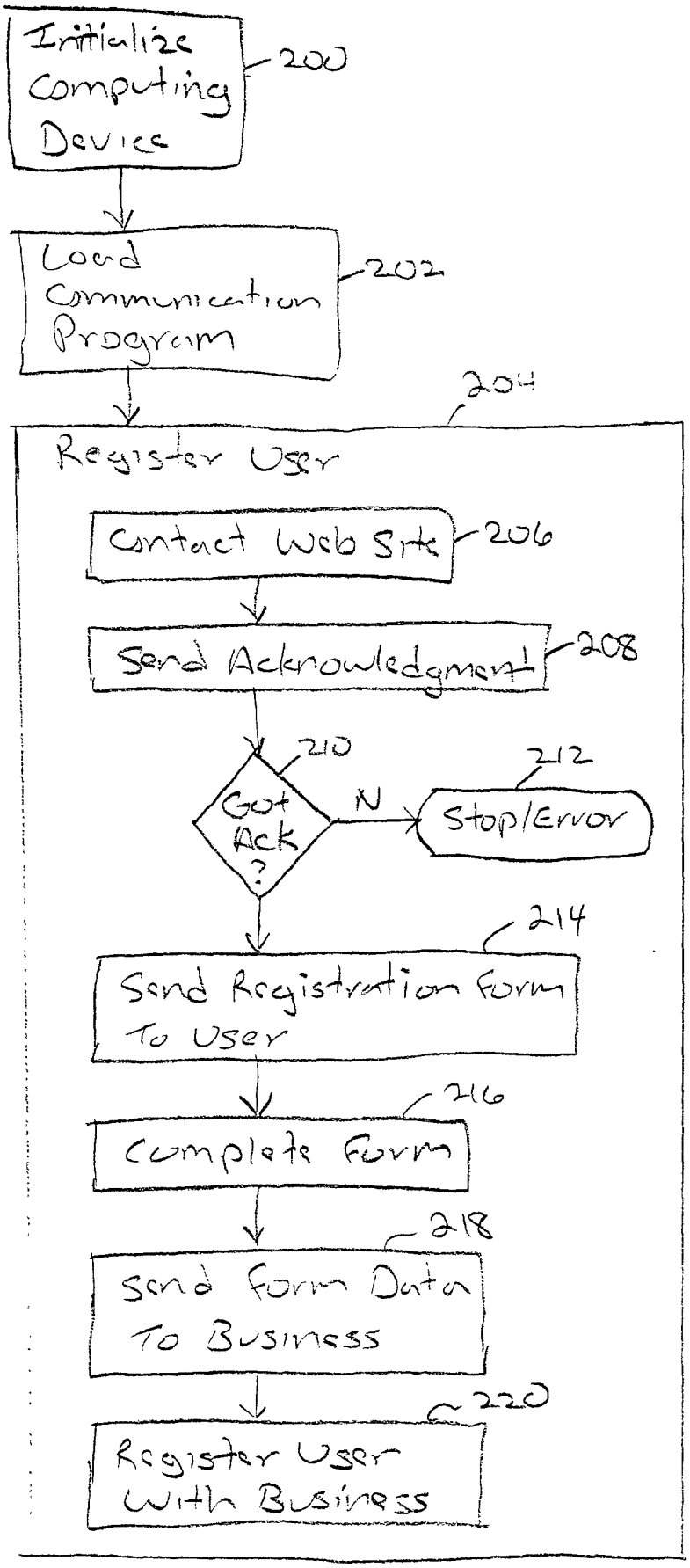

Initialize Computing Device
200
Load Communication Program
202
204
Register User
Contact Web Site
206
Send Acknowledgment
208
210
Got Ack ?
N
212
Stop/Error
214
Send Registration Form To User
216
Complete Form
218
Send Form Data To Business
220
Register User With Business

FIG. 3

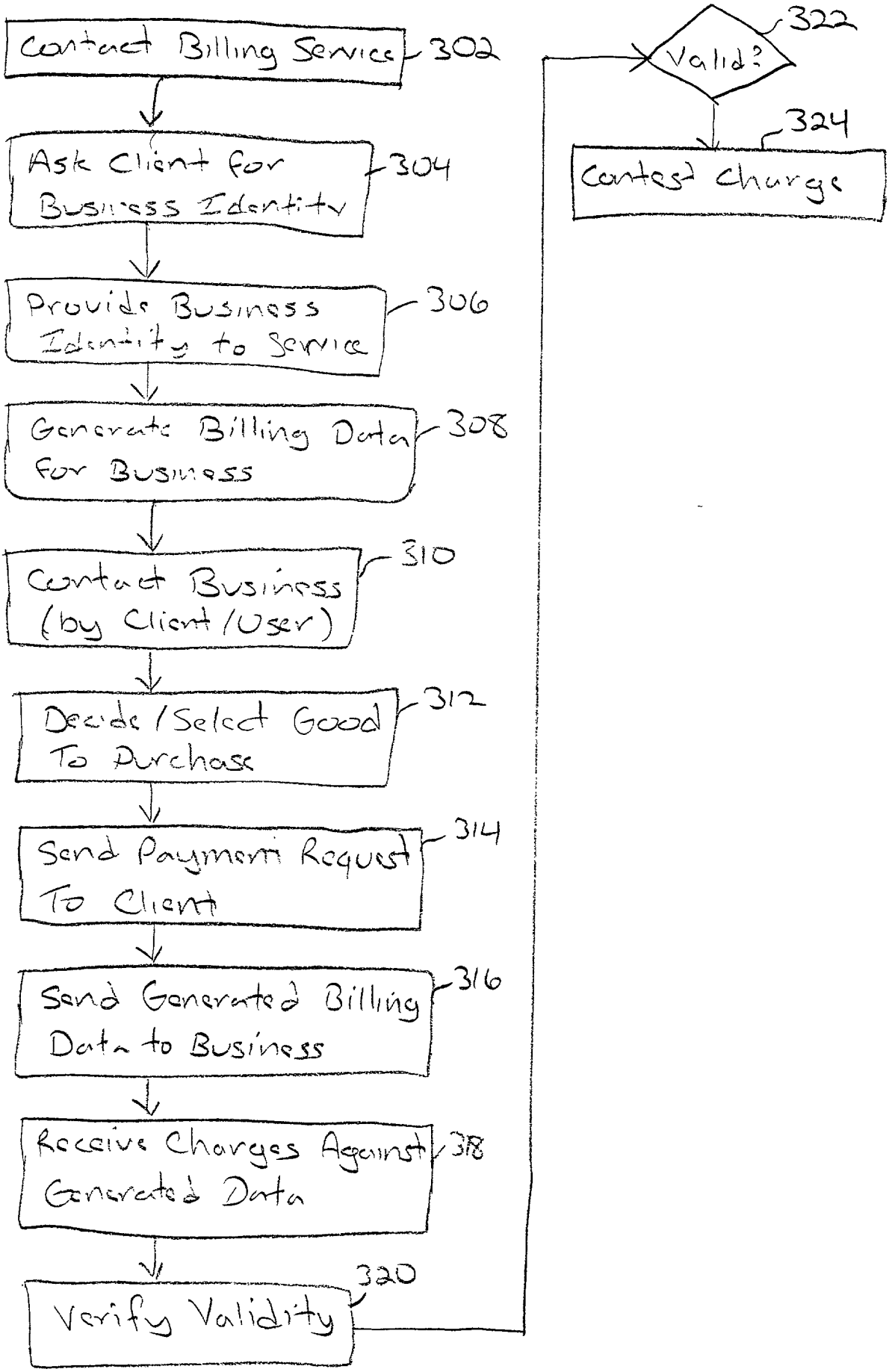
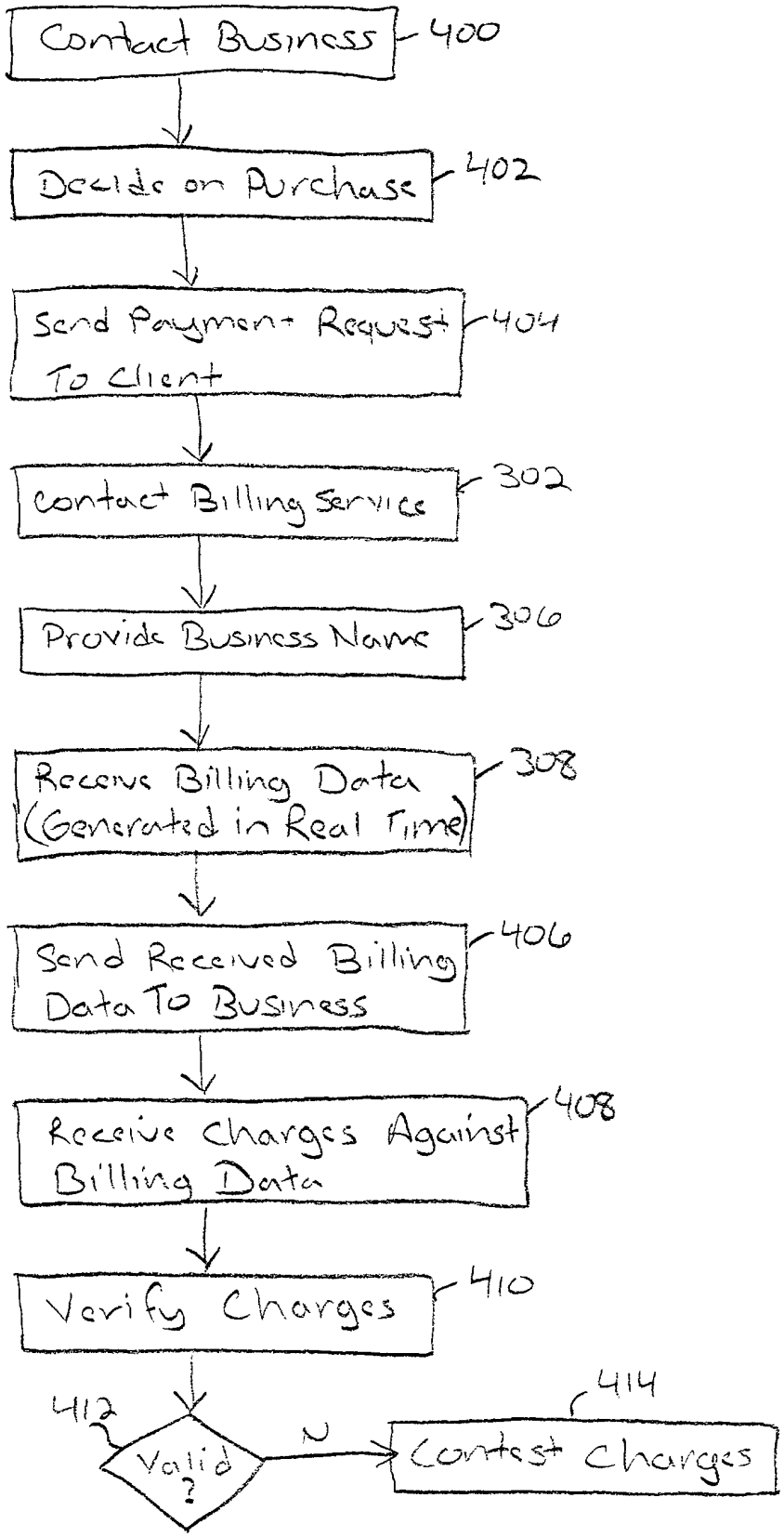
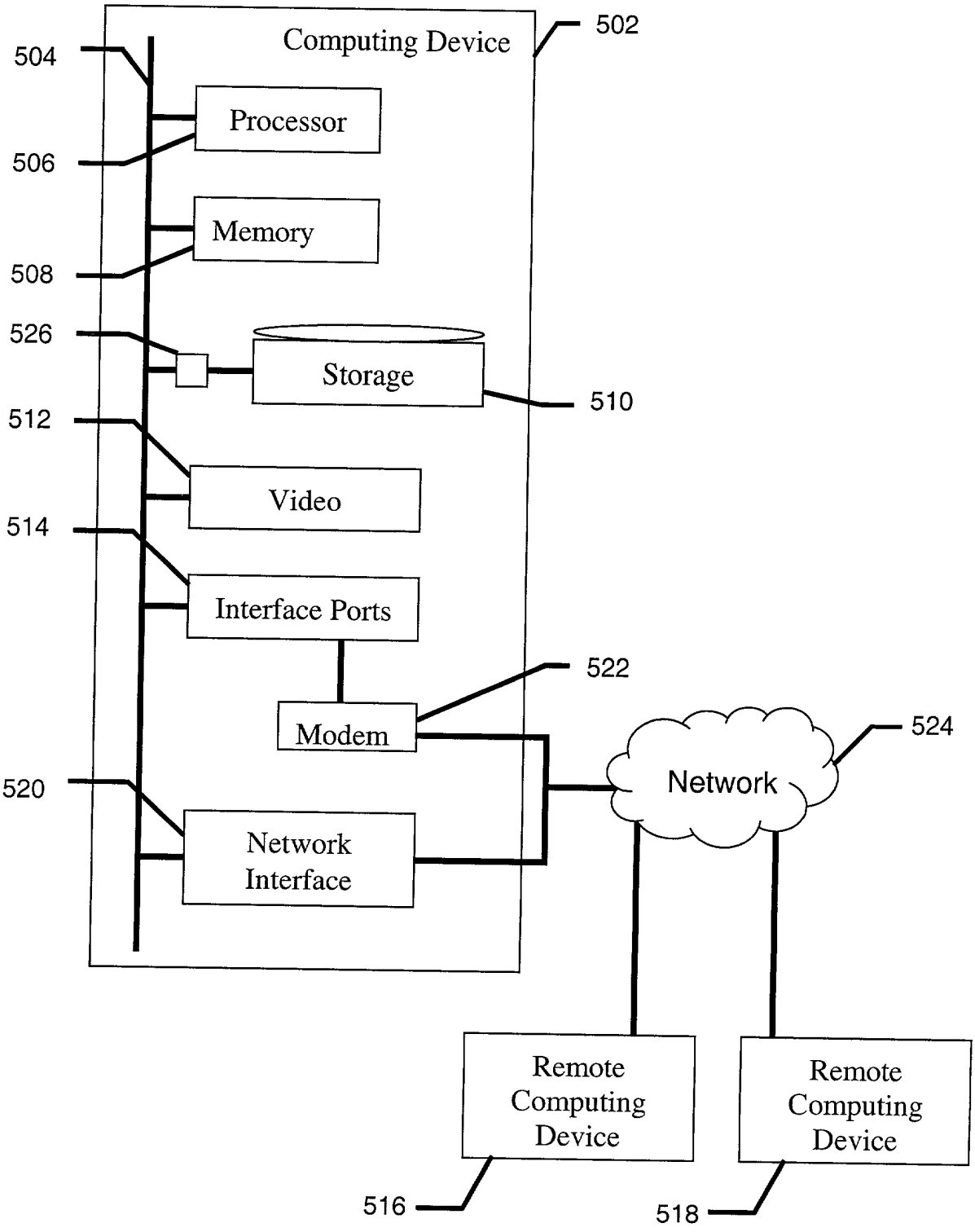

Contact Billing Service
302
Ask Client for Business Identity
304
Provide Business Identity to Service
306
Generate Billing Data for Business
308
Contact Business (by Client/User)
310
Decide/Select Good To Purchase
312
Send Payment Request To Client
314
Send Generated Billing Data to Business
316
Receive Charges Against Generated Data
318
Verify Validity
320
Valid?
322
Contest Charge
324

FIG. 4


Contact Business
400
Decide on Purchase
402
Send Payment Request To Client
404
Contact Billing Service
302
Provide Business Name
306
Receive Billing Data (Generated in Real Time)
308
Send Received Billing Data To Business
406
Receive Charges Against Billing Data
408
Verify Charges
410
412
Valid ?
N
414
Contest Charges

# FIG. 5


Computing Device
502
504
Processor
506
Memory
508
526
Storage
510
512
Video
514
Interface Ports
522
Modem
524
Network
520
Network Interface
Remote Computing Device
Remote Computing Device
516
518

Attorney's Docket No.: 004814.P017

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or any original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

## MASKING PRIVATE BILLING DATA BY ASSIGNING OTHER BILLING DATA TO USE IN COMMERCE WITH BUSINESSES

the specification of which ☒ is attached hereto.
☐ was filed on _____ as
United States Application Number _____
or PCT International Application Number _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

| APPLICATION NUMBER | COUNTRY (OR INDICATE IF PCT) | DATE OF FILING (day, **month**, year) | PRIORITY CLAIMED UNDER 37 USC 119 |
|---|---|---|---|
| | | | ☐ No ☐ Yes |
| | | | ☐ No ☐ Yes |
| | | | ☐ No ☐ Yes |

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

| APPLICATION NUMBER | FILING DATE |
|---|---|
| | |
| | |

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

| APPLICATION NUMBER | FILING DATE | STATUS (ISSUED, PENDING, ABANDONED) |
|---|---|---|
| | | |
| | | |

I hereby appoint the persons listed on Appendix A hereto (which is incorporated by reference and a part of this document) as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to:
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(Name of Attorney or Agent)
12400 Wilshire Boulevard, 7th Floor, Los Angeles, California 90025 and direct telephone calls to:
Steven D. Yates, (503) 684-6200.
(Name of Attorney or Agent)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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# Appendix A

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